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A Framework for Enhancing Operational Capabilities

Glenn A. Kent, William E. Simons

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PREFACE

This report presents a conceptual and managerial framework for linking programs to acquire defense systems with our national security objectives. It also critiques certain features of the approach currently taken in the Department of Defense. The framework applies to all the military services, although much of the illustrative material is drawn from Air Force experience. It represents a portion of concept formulation research under the National Security Strategies Program of Project AIR FORCE.

The authors' approach to the problem reflects publicly expressed concern by members of Congress, the views of former and serving DoD officials, and personal observations of military force planning. This report should be of interest to all who seek a more straightforward and relevant approach to defense planning, particularly to service staffs and other DoD offices with responsibilities for force planning and related program development.

Previous published work under this project was Glenn Kent, *A Framework for Defense Planning*, R-3721-AF/OSD, August 1989.

SUMMARY

This report suggests a straightforward approach for linking defense system acquisition programs with our national security objectives. It reflects two related defense planning issues addressed in the report of the Packard Commission and in the Goldwater-Nichols Act, both in 1986: (1) lack of clarity regarding the relative importance and relevance of the military capabilities we are trying to achieve, and (2) excessive consumption of time, energy, and dollars in acquiring the systems to achieve these capabilities.

The framework to link programs (tasks) to national security objectives elaborates on the concept of subordinate objectives—i.e., a plan of action (strategy) at one level of organization defines objectives for the next subordinate operational level. Planning efforts can be described as a hierarchy of objectives from national security objectives through subordinate objectives and finally to accomplishing specific military tasks, the fundamental building blocks of military capability.

Given the presence of perceived enemy intent and capability that threaten our fundamental goals and interests, strategists at the National Security Council (NSC) level issue statements that broadly define national objectives with respect to political, economic, and military power.

Strategists at the national military level—the Secretary of Defense and the Chairman of the Joint Chiefs of Staff—further refine the objectives relating to military power and identify regional operational objectives.

Regional operational planners further refine objectives and develop plans that define how various military tasks will achieve operational objectives. These *concepts of employment* describe the timing, scope, and duration for accomplishing these tasks.

The final level in the hierarchy of planning describes what each contributing operational unit and system must do to perform specified military tasks. The instrument for defining how tasks are to be accomplished is an *operational concept*, which defines specific functions that systems and people will perform and describes the systems and subsystems to be developed and acquired.

To better structure the effort within DoD for enhancing operational capabilities, we propose a framework of five functional pillars:

- **Pillar I: Assess capabilities to achieve projected operational objectives, identify critical deficiencies, determine the relevance of enhancing capabilities, assess opportunities to do so, and direct concept formulation.** This is the realm of those with a vision of future combat environments and projected operational objectives. After identifying and stating authoritatively the critical deficiencies to be overcome, they direct a specific DoD element, usually a military service, to initiate "concept formulation." That is, the service will convene action groups to define and evaluate operational concepts for carrying out military tasks and alleviating projected deficiencies. Directing such action constitutes Milestone 0.
- **Pillar II: Formulate, define, evaluate, and demonstrate new concepts.** This is the realm of experts representing all aspects of an operational concept. The desire to accomplish specific military tasks for stated operational objectives ("requirements push") interacts with enabling technologies ("opportunity push"). The intended output of this pillar is to define and evaluate new alternative concepts for alleviating a stated deficiency in capability, including the upgrading of existing basic systems. This pillar shifts the emphasis from developing technology aggregates to performing stated military tasks. Actions in this pillar also include an evaluation of preferred concepts and a detailed "road map" of how new systems designed to implement the concept(s) should be acquired. A *Conceivers' Action Group* (CAG) is organized by operational planners and is the forum for an interactive partnership among user command operators, scientists, engineers, user staff experts, and others.
- **Pillar III: Decide, allocate, and budget.** Officials with an overview of all DoD programs decide which concepts are worthy of implementation, and determine whether to allocate resources to implement the selected concepts. A decision to proceed constitutes "Milestone I" approval for such concepts and attendant programs. This pillar focuses only on the decision of whether to allocate resources to this objective and attendant concepts.
- **Pillar IV: Acquire systems.** Those who direct and manage programs to develop and produce defense equipment perform a series of periodic management reviews, decide whether and when to move programs into full-scale engineering development (Milestone II) and whether systems under development are ready for full-rate production (Milestone III). The intended outcomes from this pillar are major pieces of equipment.

- **Pillar V: Organize and equip force elements.** This is the realm of those responsible for organizing, equipping, and training force elements with weapon and support systems to enable them to perform the tasks and achieve the operational objectives stated by the combatant commanders. The military services play the central roles in this pillar in integrating new or improved items of equipment into their force structures.

The services have special contributions to make in the functions of Pillars I and II. Their contributions are critical in defining better concepts for performing military tasks to achieve stated operational objectives. This activity includes initiating efforts to define, evaluate, and (when necessary) demonstrate new concepts for alleviating critical operational deficiencies. Also, the services assist in identifying those objectives (and critical deficiencies) that warrant increased emphasis and resources.

Although many features of DoD's current management structure reflect the logic of this framework with its five pillars, others do not. Important policy documents that deal with the management of military force planning contain major ambiguities. In particular, they are unclear regarding the responsibility of senior DoD managers for two key elements of this planning process:

- Who decides and directs (Milestone 0—the output of Pillar I) initiation of concept formulation?
- What is the proper forum for deciding (Milestone I) whether to allocate resources to implement new concepts and attendant systems?

Our reading of the National Security Act, particularly as modified by the Goldwater-Nichols legislation of 1986, suggests the following: Once we have identified deficiency in our capabilities to achieve a stated operational objective, the Chairman of the Joint Chiefs of Staff (CJCS) must direct concept formulation efforts by an appropriate element of DoD, usually the services. The Joint Requirements Oversight Council (JROC) should therefore be recognized as the proper DoD forum for assisting the CJCS in evaluating and integrating the requirements of the combatant commanders. The services should also have the authority to initiate concept formulation (Pillar II) on their own and should be encouraged to do so.

Similarly, the Deputy Secretary of Defense (DepSecDef), as the official already designated as responsible for managing the DoD's planning, programming, and budgeting system (PPBS), is properly responsible for deciding whether to allocate additional resources toward

achieving some stated operational objective. We recommend that it be made clearer that the Defense Planning and Resources Board (DPRB), already the appropriate forum to assist DepSecDef with the PPBS, is indeed the DoD forum for deciding where to allocate resources. The membership of the DPRB reflects the range of expertise appropriate for the output of Pillar III: deciding to allocate resources to implement some concept.

In conclusion, the report presents a framework that

1. Provides a clear audit trail from national objectives to military tasks.
2. Defines a coherent flow of functions among forums and identifies which official and what forum is responsible for taking timely and purposeful action.

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ACRONYMS AND ABBREVIATIONS

ASD (PA&E) and Evaluation	Assistant Secretary of Defense for Program Analysis
CAG	Conceivers' Action Group
CINC	Commander-in-Chief
CJCS	Chairman, Joint Chiefs of Staff
CONUS	Continental United States
DAB	Defense Acquisition Board
DCD	Designated Concept Demonstration
DD	Department of Defense Directive
DDR&E	Director, Defense Research and Engineering
DepSecDef	Deputy Secretary of Defense
DMR	Defense Management Report
DoD	Department of Defense
DPG	Defense Planning Guidance
DPRB	Defense Planning and Resources Board
JCS	Joint Chiefs of Staff
JROC	Joint Requirements Oversight Council
NSC	National Security Council
OSD	Office of the Secretary of Defense
PEO	Program Executive Officer
PM	Program Manager
PPBS	Planning, Programming, and Budgeting System
SAE	Service Acquisition Executive
SecDef	Secretary of Defense
USD/A	Undersecretary of Defense for Acquisition
USD/P	Undersecretary of Defense for Policy
VCJCS	Vice Chairman, Joint Chiefs of Staff

1. INTRODUCTION

Criticism of the failure of current Department of Defense (DoD) spending plans to reflect the upheaval in parts of the Soviet Union and the political changes in Central Europe is, in many respects, merely the latest rendition of an old refrain. For years, members of Congress and other critics have been complaining that the Pentagon's programs for buying new weapon systems and supporting planned forces have lacked a meaningful linkage to our national security strategy. Frequently, such complaints have been used to reinforce criticism of the procedures and expense involved in the purchase of military resources. For example:

Without a careful reassessment of what military abilities will be most needed in view of a reduced Soviet threat in Europe, a continued Soviet nuclear threat and the likelihood of brush fires around the world, defense cuts will be generalized and the specifics based on protecting projects that have economic importance to individual congressional districts. (*Fort Worth Star-Telegram* editorial, March 20, 1990.)

The fundamental problem is to match forces (and transportation) to possible requirements; no easy task as the Soviet menace diminishes and numerous other non-well-wishers-of-America remain relatively quiescent. Lacking a clear and present danger, and any strategy beyond "build-down," each service tends to pursue its own interests. And indeed, each service faces a different set of problems in deciding how (or whether) to restructure. (*Insight*, December 25, 1989-January 1, 1990, p. 22.)

This report suggests a straightforward approach for dealing with the problem of linking system acquisition programs to our national security objectives and strategies, at least with respect to the contribution that the Department of Defense makes to U.S. security. The report emphasizes the processes for defining and deciding what military capabilities should be acquired.

WHAT IS THE PROBLEM?

Military force planning presents a twofold problem, especially in a politico-economic context of limited defense resources: (1) uncertainty regarding the relative importance and relevance of the capabilities we are trying to acquire, and (2) excessive consumption of time, energy, and dollars in acquiring means to achieve those capabilities.

In 1986, the Packard Commission identified these problems with particular clarity. The commission was asked to recommend improve-

ments both in military force planning and in the process for acquiring systems and weapons.

The Commission finds that there is a great need for improvement in the way we think through and tie together our security objectives, what we spend to achieve them, and what we decide to buy. . . . Today, there is no rational system whereby the Executive Branch and the Congress reach coherent and enduring agreement on national military strategy, the forces to carry it out, and the funding that should be provided—in light of the overall economy and competing claims on national resources. The absence of such a system contributes substantially to . . . imbalances in our military forces and capabilities, and increase[s] in the costs of procuring military equipment.¹

Barely four months after the report was released, many of these same concerns were reflected in congressional legislation. The Goldwater-Nichols Act of October 1, 1986, also called for better articulation of the relationship between national security objectives and the allocation of resources to military forces.

CLARIFYING THE ISSUES

This report suggests ways in which the Department of Defense can define a clearer sense of direction and how that direction can be followed consistently as the DoD provides the most relevant military capabilities within the constraints imposed. The challenge is to link developing and acquiring military equipment and organizing and equipping forces more closely to recognized national security objectives.

Fundamental to any improvement is a disciplined way of thinking about the interrelationships among the stages in the process. This discipline is needed in two respects—a reliable management framework and a consistent lexicon for describing important elements of the framework and the process.

The management framework must include:

- Articulating projected operational objectives.
- Identifying critical deficiencies.
- Formulating new concepts to alleviate deficiencies and achieve projected objectives to the maximum extent possible.
- Deciding which concepts to implement.

¹President's Blue Ribbon Commission on Defense Management, *A Quest for Excellence: Final Report to the President*, June 1986, p. xvii.

- Initiating and completing development programs to implement the agreed-upon concept.

The lexicon demands consistent use of terms that are germane to defense planning. For example, the term "requirement" should not be used in reference to military hardware systems. Rather, this term should be applied only in the sense of: (1) the need to achieve some operational objective, (2) the need to increase our capability to achieve some operational objective, or perhaps (3) the need to accomplish some stated military task. We should, however, think of systems as means of implementing concepts to accomplish tasks and consider systems' performance features ("specifications") as reflecting wise choices among a system's many possible features and the cost of acquiring that system.

The term "acquisition" should apply only to the development and procurement of systems or subsystems; it should not refer to activities and processes that necessarily precede the initiation of development programs.

Section II explores the relationship between strategy and objectives as a basis for planning. It briefly reviews recent attempts to obtain firmer links between national security objectives and the allocation of resources to defense programs. It also shows how a plan of action (strategy) at one level of organization can define objectives for the next subordinate level.

Section III describes a systematic way of linking national objectives to specific military capabilities that are relevant to those objectives. It illustrates how a clear audit trail can be established from fundamental national goals to operational concepts for accomplishing specific military tasks.

Section IV presents a framework for organizing the various stages in force planning and the acquisition of systems. It delineates the discrete roles and purposeful actions appropriate to each stage and defines the essential relationships among them.

Section V discusses the ambiguities and unproductive formulations in current DoD directives pertaining to these topics and suggests concrete measures for improving the DoD's development planning process.

2. DECIPHERING THE ELUSIVE CONCEPT OF STRATEGY

More than 250 years ago, Maurice de Saxe wrote elegantly on the essence of strategy:

When we have incurred the risk of a battle, we should know [beforehand] how to profit by the victory, and not merely content ourselves, according to custom, with possession of the field.¹

The 18th century Marshal of France was confronted with a fairly simple geographical and political context for the power struggles he was commissioned to conduct. The sovereigns of the day were embroiled mostly in limited territorial disputes; the field armies of their "threatening" enemies, raised in neighboring countries, seldom reached 100,000 strong. Successful pursuit of objectives often resulted directly from victory on the battlefield. A century later, Clausewitz's famous maxim on strategy, "war is a mere continuation of policy by other means," called attention to the same general theme.

Perhaps the simplicity of the international security contexts in which both of these military figures operated helped illuminate a basic truth: *The essence of strategy is to link military tasks and capabilities to fundamental security objectives.* But the importance of this observation is in no way diminished by the simplicity of the environments that brought it to light. Moreover, although this idea is obviously not new, we still do not implement it very well. Undoubtedly, the wisdom of such statements and our awareness of their effect on strategic thought contribute to the current yearning for better expositions on U.S. "national strategy."

However, this is no easy task. The United States faces simultaneous challenges on many levels of international contention. Power struggles are underway with many stage settings and actors. Nuclear superpowers confront each other from different sides of the planet with destructive power enabling mutual annihilation. Recently, the problem of managing the nuclear threat has been complicated by a proliferation of nuclear capabilities by other nations and the potential for their local use in regional conflicts.

¹Maurice de Saxe, *Mes Reveries*, 1732, in Robert D. Heinl, Jr. (ed.), *Dictionary of Military and Naval Quotations*, U.S. Naval Institute, Annapolis, 1986, p. 109.

The classic problems of regional security abound. For nearly half a century, these challenges were epitomized by the division of Europe into two politically antagonistic armed camps. Now, this situation has been made more complex by democratic reform and political independence in Eastern Europe. But in other regions as well, U.S. interests and post-World War II commitments to the maintenance of international security provide the United States with a stake in the outcomes of several evolving power struggles. These situations, in turn, are linked in various ways with overarching global political, economic, and environmental issues, the resolution of which is becoming increasingly vital to the well-being of the American people and their traditional allies. Lately, moreover, state-sponsored terrorism, illegal traffic in narcotics, and international sales of highly lethal military technology have challenged national security in new ways.

All of the above argues for renewed effort to establish a better, more coherent framework for relating many different objectives to the allocation of resources.

EFFORTS TO CLARIFY STRATEGIC CONCEPTS

When President Reagan established the Blue Ribbon Commission on Defense Management in July 1985, he instructed it to review and make recommendations about specific aspects of DoD organization and management (including its planning and decisionmaking apparatus), Congressional oversight, and the process for allocating resources for defense.²

Packard Commission Recommendations

The Commission carried out the President's instructions, and in its interim report it stated that "early, firm presidential guidance" was needed to bring about improved long-range defense planning. Their purpose in calling for this presidential role was to bring the nation's security objectives into close balance with its overall foreign policy, economic goals, and fiscal constraints. The White House, the Commission reasoned, was the only executive authority capable of achieving this balance. In turn, the defense planning process—the process by which this nation shapes and supports its military forces—could be brought into closer alignment with the broader national purposes.

²Executive Order 12528, July 15, 1985.

In its final report, the Packard Commission recommended that the Secretary of Defense (SecDef) and the Chairman of the JCS annually propose a fiscally constrained national military strategy for the President's approval. This document would reflect the President's own strategic guidance and would be based on inputs from the Chairman, service chiefs, and CINCs of the operational commands. It would also contain strategic options to reflect provisional budget levels provided by the White House and outline variations within a single budget level. These would be expressed in terms of operational capabilities and would highlight critical manpower and logistics constraints on the employment of military force in specific regions. The President's selected defense program would then provide the basis for SecDef's Defense Guidance to the services and agencies to launch the department's Planning, Programming and Budget System (PPBS).³

Goldwater-Nichols Legislation

Stimulated in part by the Packard Commission findings, the Congress passed legislation in October 1986 that, among other provisions, gave some of the Packard recommendations the force of public law. With respect to the linkage of defense planning to strategic objectives, the Goldwater-Nichols legislation requires that there be a "report on the national security strategy of the United States" submitted to the Congress annually by the President. The law stipulates that this report include a discussion of at least the following:

- Worldwide interests and objectives of the nation that are vital to national security.
- Foreign policy, worldwide commitments, and national defense capabilities necessary to deter aggression and implement national strategy.
- Proposed short-term and long-term uses of the political, economic, military, and other elements of national power to achieve U.S. objectives.
- Adequacy of U.S. capabilities to carry out national strategy and the balance among all elements of national power in this regard.

Further, Goldwater-Nichols mandates that the Annual Secretary of Defense Report will henceforth reflect—in certain stipulated areas—the content of the President's national security strategy report. The stipulated points include a justification for the major U.S. military

³A Quest for Excellence, pp. 11-20, *passim*.

missions during the following fiscal year, together with an explanation of the relationship of the military force structure to those missions.⁴

Related to these provisions, Goldwater-Nichols also carries forward the Packard Commission theme of directly reflecting national strategy and objectives in the DoD's internal program management. The legislation provides that the Secretary of Defense annually prepare written policy guidance for the heads of military departments and DoD agencies that will provide "guidance for the preparation and review of the program recommendations and budget proposals of their respective components." This guidance is to include "(A) national security objectives and policies; (B) the priorities of military missions; and (C) the resource levels projected to be available for the period."⁵

The intent of Goldwater-Nichols with regard to defense planning is also indicated in its requirement of a one-time series (1987) of DoD management reports. Among other requirements, these reports were intended to provide SecDef, CJCS, service secretary, and independent contractor views on whether:

- DoD organization ensures that strategic planning and contingency planning are linked to, and derived from, national security strategy, policies, and objectives.
- The department's PPBS ensures that strategic planning is consistent with national security strategy, policies, and objectives.⁶

Defense Management Report

In February 1989, President Bush directed Secretary of Defense Dick Cheney to develop a plan "to accomplish full implementation of the recommendations of the Packard Commission" and to substantially improve the performance of the defense acquisition system. Secretary Cheney's resulting report in July specified several departmental management features aimed at improving the planning process. Some changes were outlined with respect to the Secretary's Defense Guidance. Recommendations by the Defense Planning and Resources Board (DPRB) on specific defense planning issues and alternative

⁴Public Law 99-433 (Goldwater-Nichols Department of Defense Reorganization Act), October 1, 1986, Sec. 803. Goldwater-Nichols also provides for organizational and procedural changes that are outside the purview of this report—e.g., CJCS responsibilities for contingency planning, new institutions to promote "jointness" among the services, content and attendance standards for professional military education, etc.

⁵Public Law 99-433, Sec. 102.

⁶Public Law 99-433, Sec. 109.

planning scenarios were to be incorporated in the Secretary's *Defense Planning Guidance* (DPG), to be issued each October for the following year's programming cycle. In addition to the planning issues, the DPG was to contain a military strategy, developed by the CJCS, "a limited set of high-priority 'Program Planning Objectives,'" projections of the effect of these objectives on future funding and DoD investment plans, and a 20-year outline of major system replacements expected by the services and defense agencies.⁷

The Undersecretary for Policy (USD/P) was designated as the department's primary adviser for the planning phase of the PPBS. In addition, the DPRB was named to replace the Defense Resources Board and given responsibility to help its chairman, the Deputy Secretary of Defense, "develop stronger links between our national policies and the resources allocated to specific programs and forces."

Despite these several efforts, criticism of existing practice continues:

The first step toward correcting this problem [of program decisions being driven by special interest groups] is for the military services to reorganize and prioritize their requirements . . . in the context of a revised, cohesive national strategy. . . . Defense reform will have little success until . . . we first reassess the changing threat, develop a strategy to counter that threat, build and re-shape our forces to execute the strategy, and do this all within realistic budget constraints. . . . (Senator Charles E. Grassley (Rep., Iowa), *The Defense Management Challenge: Avoiding a Decade of Expensive Weakness*, December 13, 1989—a response to the SecDef's Defense Management Report to the President.)

STRATEGY OR OBJECTIVES?

Most laments about the alleged lack of rationality in the current defense planning process center around the observation that the United States lacks an explicit strategy at both the national security and national military planning levels.

A strategy is a plan for using available resources to achieve specified objectives.⁸ In a sense, such plans do exist at the levels mentioned. They exist in the form of budgets. However, these spending plans usually lack a coherent audit trail showing how allocating resources in this manner achieves recognized national security objectives. Or if an audit trail is evident, the allocation may not be what the critic

⁷Secretary of Defense Dick Cheney, *Defense Management Report to the President*, July 1989, pp. 1, 5, 6.

⁸This is a paraphrase of the definition given in the *Joint Dictionary of Military Terminology*, JFM 1-2.

would prefer. So part of the defense planning problem centers on the perception that public budget statements do not reflect an underlying rationale for the allocation of resources reflected in the documents.⁹

As required by the Goldwater-Nichols Act, a comprehensive statement of national goals and objectives exists at the national security planning level. The President's annual statement of National Security Strategy for 1990 outlines the nation's worldwide interests stemming from our fundamental national goals and specifies the objectives derived from each (pp. 2-3). The statement also suggests how the national effort to achieve stated national security objectives is to be apportioned among different areas of executive responsibility; it outlines diplomatic efforts undertaken largely by the Department of State, it states economic policies implemented by several different agencies, and it describes activities carried out by the military services and agencies of the Department of Defense.¹⁰ In the process, the more functional objectives appropriate to departmental effort—but subordinated to a particular national security objective—are identified.

This annual statement illustrates an important point: *Outlining a plan (strategy) to attain stated goals at one level of organization simultaneously defines objectives to be achieved at the next level of implementation.* Thus, plans for one of the executive departments identifies objectives appropriate for each major division and functional agency. An important advantage afforded by attention to this pattern of subordinate objectives, rather than by a series of elaborate strategy papers, is its utility in tracing a clear audit trail from the highest level of policy articulation down through successive levels of administration.

⁹The statement of national interests and objectives (pp. 2-3) and the "defense agenda" (Part VI) in President Bush's *National Security Strategy of the United States* are little different from the objectives stated by Senator Sam Nunn in his speech on April 19, 1990, outlining "a new military strategy" for future U.S. forces.

¹⁰See the related statements in *National Security Strategy of the United States*, March 1990, pp. 15-30.

3. HIERARCHY OF DEFENSE PLANNING OBJECTIVES

The hierarchy of defense planning objectives—from national security objectives derived from fundamental goals down to specific military functions—is depicted in Fig. 1. Plans of action are defined at each level in response to perceptions of the threat and the strategic environment. Planners at the national military level identify regional operational objectives, and regional planners identify specific military tasks to be accomplished according to regional operational plans. Feedback enables plans to be modified in reaction to changing operational and fiscal constraints and the changing threat.

FUNDAMENTAL GOALS TO MAINTAIN

Fundamental goals are defined by the Constitution of the United States. They include physical safety for our citizens, independence for the nation, and a democratic way of life. They are enduring and unchanging. There is no feedback loop. These fundamental goals are to be maintained regardless of the threat and at all costs.

NATIONAL SECURITY OBJECTIVES TO ATTAIN

National security objectives are derived in response to threats to our fundamental goals. NSC members and staff strategists at that level define these objectives. For example, the presence of many Soviet divisions on the inter-German border after World War II, coupled with the actions and statements by Soviet leaders, caused strategists at the national security level to define (among others) the following national security objectives: prevent the Soviet Union from dominating Western Europe, deter the Soviets from launching a large military campaign to overwhelm Western Europe, and prevent such a campaign from being successful if launched.

National security objectives include objectives for all instruments of power: political/diplomatic, economic, and military. Since this report is about defense planning, only objectives for the military instrument will be traced to subordinate levels.

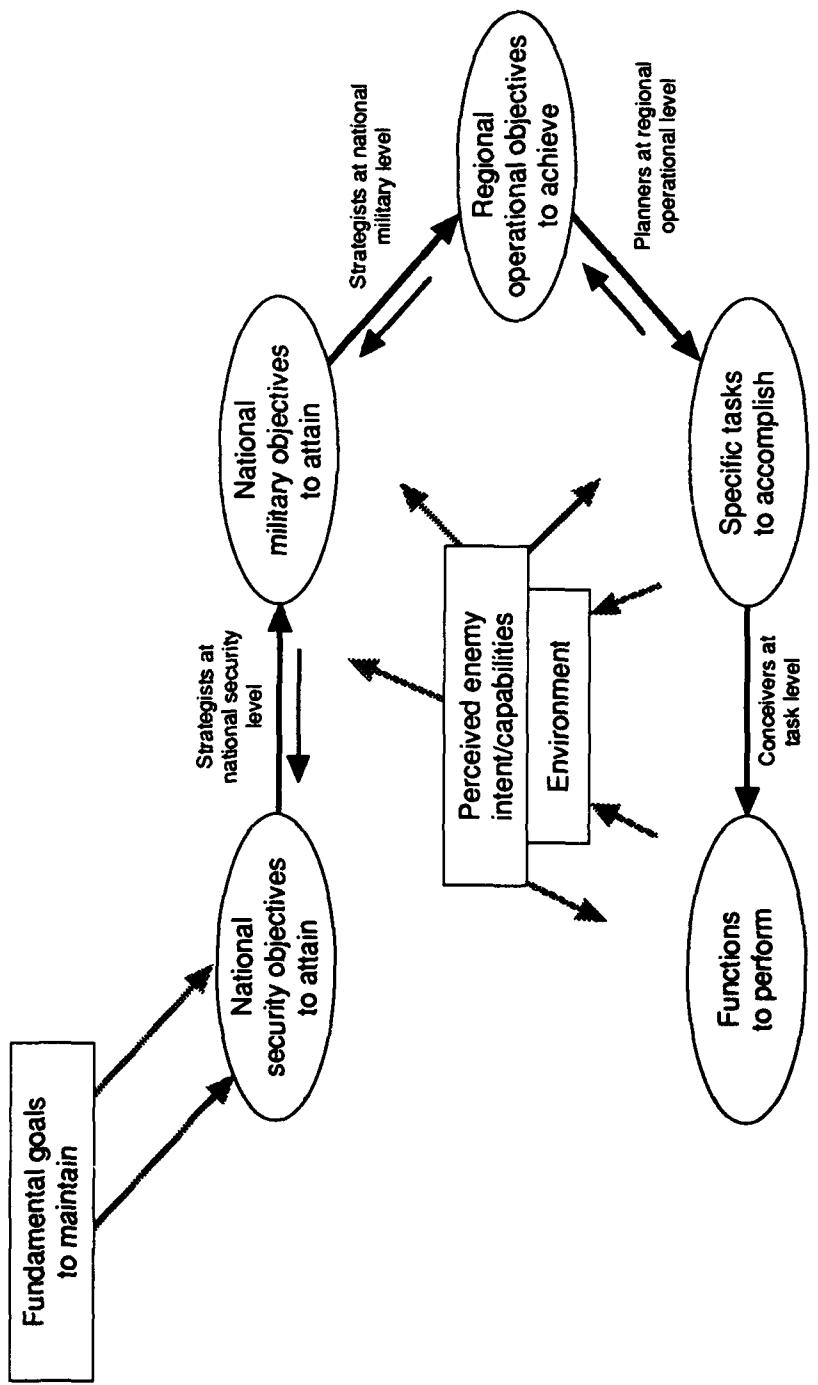


Fig. 1—Hierarchy of security objectives

NATIONAL MILITARY OBJECTIVES TO ATTAIN

Whereas national *security* objectives embrace all instruments of national power, national *military* objectives state those objectives to be achieved through the use of military resources. The national security objectives defined above prompt planners (strategists) at the JCS level to adjust and refine subordinate objectives.

To illustrate, we continue the example of security objectives for Western Europe. National military objectives to support the national security objectives for the European region include:

- Conduct a robust forward defense.
- Maintain the capability for flexible response.

The framing of military objectives for a particular region reflects the politics and defensive capabilities of our local allies as well as the military capabilities of potential opponents who threaten our national interests and security objectives for that region. For example, even for a region representing interests similar in importance to Europe, preparations to conduct a forward defense there would not be accorded the status of a U.S. national military objective unless the region were threatened by an opponent with the capability of carrying out an effective invasion or a damaging attack against local defenses. Thus, as the capabilities of potential enemies and those of our allies change, the relevance of a given U.S. national military objective for a particular region can intensify or fade. That relevance is also affected by such variables as economic and political conditions.

As we have seen, current national military objectives are stated in general terms in the President's annual statement of national security strategy. They are further codified in the SecDef's annual DPG, based on substantial inputs from the CJCS and the CINCs of the combatant commands.

REGIONAL OPERATIONAL OBJECTIVES TO ACHIEVE

Like the national military objectives to which they are subordinated, operational objectives are regionally specific. They define desired outcomes of regional military preparations or of military campaigns. To achieve any one of those outcomes, regional commanders must orchestrate the preliminary deployments and, if necessary, the employment of the many different force elements at their disposal. This

level of planning has become known as *operational art*.¹ In the course of these preparations, a number of different regional operational objectives are identified and pursued.

Operational theater planners with unique interests and regional expertise play a major part in refining regional operational objectives. Through feedback loops, these regional operational objectives are reflected in the CJCS strategy discussions and identified in the DPG.

The following list includes some operational objectives subordinate to the national military objective, "conduct a robust forward defense in Europe".²

- Deploy and reinforce from the continental United States (CONUS).
- Provide command and battle management.
- Disrupt enemy's command and control.
- Gain control of the air.
 - Suppress generation of enemy air sorties
 - Defeat enemy attacks (aircraft and missiles)
 - Defeat enemy air defenses
- Interdict enemy ground forces.
 - Disrupt lines of communication
 - Damage, disrupt, demoralize enemy troops (in assembly areas and fortified emplacements)
 - Delay/damage enemy follow-on forces
 - Suppress enemy surface-to-surface missiles and artillery

¹The German General Staff developed the concept of military operational art as a distinct planning realm connecting strategy with military tactics and taught it in the Kriegsakademie in the period just before World War I. The theoreticians and staff colleges of the Red Army adopted and elaborated on it in the interwar period and incorporated it in Soviet military science. The U.S. Army embraced the general concept in the 1970s and 1980s and it is reflected prominently in The Army's AirLand Battle Doctrine. See T. N. Dupuy, *Understanding War: History and Theory of Combat*, Paragon House, New York, 1987, pp. 66-70, *passim*; William P. Baxter, *Soviet AirLand Battle Tactics*, Presidio Press, Novato, Cal., 1986, pp. 18-22, 27-28, *passim*; Martin van Creveld, *The Training of Officers*, The Free Press, New York, 1990, pp. 25, 53-54; Richard E. Simpkin, *Race to the Swift: Thoughts on Twenty-First Century Warfare*, Brassey's Defence Publishers, London, 1985, pp. 18-22 *passim*; *Operations*, FM 100-5, Hq. Dept. of the Army, Washington, D.C., May 1986.

²This list of operational objectives is not intended to be exhaustive. Because our report has been prepared for the U.S. Air Force, the list contains a preponderance of objectives appropriate for air operations. However, the principle of deriving regional operational objectives from specific national military objectives applies to all forms of military operations.

- Provide close support to ground force elements.
- Redeploy forces within theater.

SPECIFIC MILITARY TASKS TO ACCOMPLISH

The next subordinate level of planning objectives defines the major tasks that must be completed to achieve a specific regional operational objective. Needed here are statements of what different force elements might actually do, so that collectively the desired operational objective is achieved. In our illustrative example, we further disaggregate the operational objective, "provide command and control of force elements" and list the separate tasks subordinate to that objective:

- Conduct surveillance of the target areas and related support structures.
- Evaluate target data collected by sensor systems.
- Define target structure and individual characteristics.
- Allocate available resources among selected missions to implement theater concept of employment.
- Allocate specific targets among designated force elements.
- Select flight routes, tactics, and ordnance for specific targets.

A further illustration is provided by the operational objective "suppress generation of enemy air sorties." The separate tasks subordinate to that objective are:

- Crater runways.
- Mine operating surfaces.
- Disrupt/damage airbase infrastructure.
- Damage aircraft in open.
- Damage aircraft in shelters.
- "Pin down" takeoffs.

As shown above, several different tasks may be undertaken in pursuit of the same operational objective. The operational commander and the planner are confronted with the problem of allocating the appropriate weight of effort to each task relative to the others, depending in part upon the opportunity costs of using available force elements to accomplish one task rather than others and to achieve the stated operational objective rather than others.

Military tasks are defined as theater commanders refine their *concept of employment* of the resources they expect to have at their disposal in pursuing specified operational objectives. These concepts of employment indicate the probable allocation of effort among tasks: where, how frequently, and for what scope and duration force elements will be applied to the accomplishment of various tasks.

SPECIFIC FUNCTIONS TO PERFORM

The final level in this hierarchy of planning objectives describes exactly what each contributing operational unit and system must do to complete a specified military task.

For each military task, an *operational concept* describes how that task is to be accomplished and, in the process, defines the constituent functions that systems and people will perform in accomplishing the stated task.

Development programs are then initiated to acquire the systems to implement the operational concept. Force elements are then organized and trained according to the operational concept to perform the tasks and the concept of employment to achieve stated operational objectives.

IN SUMMARY

We have shown how one can go coherently from stated national security objectives, to national military objectives, to regional operational objectives, to military tasks, to operational concepts, to development programs, and finally to organizing and equipping force elements. There is a clear audit trail from top to bottom. Since we have subordinated from the top down, we can also integrate upward. For example, acting in concert, force elements perform tasks that in the aggregate form the commander's concept of employment to achieve stated operational objectives.

4. PROVIDING FOR ENHANCED DEFENSE CAPABILITY

So far, we have been speaking only in terms of what we would like to be able to do. We need now to consider the process that translates objectives into concrete plans for enhancing our capabilities to achieve them. This section outlines and explains the five functional pillars that are essential to such a process and then assesses current DoD management procedures in comparison with this framework.

FIVE PILLARS FOR ENHANCING CAPABILITIES

The five pillars and their interrelationships are illustrated in Fig. 2. The output of each successive pillar informs and energizes activities in the pillar that follows. Since, ultimately, "enhanced" capability becomes a current capability, the process recycles itself and does so in the presence of changes in the environment and threat. The nature of each pillar is described briefly below.

- **Pillar I: Assess capabilities to achieve projected objectives, identify critical deficiencies, determine the relevance of enhancing capabilities, assess opportunities to do so, and direct conceivers.** This is the realm of those with a vision of future combat environments and projected operational objectives. We call them the "Worriers." The perspective attained by these "Worriers" prompts them to direct others where to focus their efforts to define new concepts that will, if implemented, enhance our capabilities in critical areas.
- **Pillar II: Formulate, define, evaluate, and demonstrate new concepts.** These functions are performed largely by experts representing all aspects of an operational concept. We call them "Conceivers."
- **Pillar III: Decide, allocate, and budget.** This is strictly reserved for officials with the authority to shape the overall DoD program for developing and procuring weapon and support systems. We call them "Deciders."

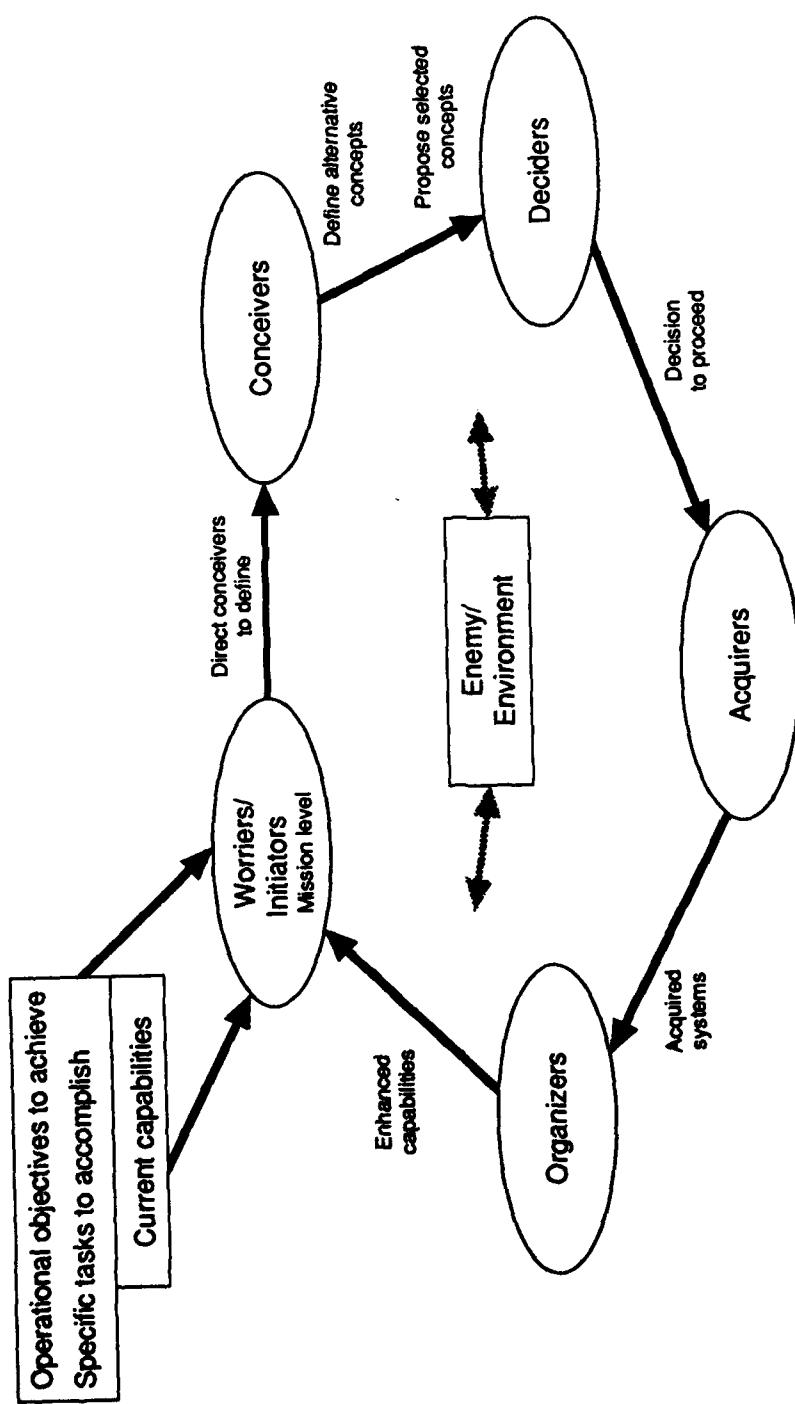


Fig. 2—The five pillars for enhancing military capabilities

- **Pillar IV: Acquire systems.** This realm is concerned with directing and managing development programs and the production of defense equipment. We call those who do this "Acquirers."
- **Pillar V: Organize and equip force elements.** This is the realm of those with responsibility for organizing, equipping, and training force elements with weapon and support systems so that the force element can perform the tasks and achieve the operational objectives stated by the combatant commanders. We call them "Organizers."

Each of these pillars will be discussed in detail. In the figures accompanying the discussion, the inputs and output of each pillar are shown in rectangles. The functions of the pillar are contained in the center of the figure, and the organizer or responsible official for these functions is shown in a bordered circle. Major influences on (or participants in) each pillar's central functions are shown in ellipses around the central element of the figure.

STRUCTURING PILLAR I: THE WORRIERS

The Worrier's role is to assess the capabilities available to achieve the operational objectives, both current and projected, set forth in the hierarchy of security objectives (see Fig. 1). In turn, they identify critical deficiencies in those capabilities. To motivate purposeful action—the ultimate function of the Worriers—they direct a specific Service or DoD agency to convene action groups of Conceivers (see Fig. 3).

The Worriers should be proactive, not passive; they should not sit back and wait for some other agency to request that they consider what the agency regards as an operational problem. Rather, they should periodically update their projections and concerns about operational deficiencies. The Worriers then must affirm the relevance of enhancing our capabilities to achieve the stated operational objectives and make a general judgment about the prospects of doing so. Finally they direct the Conceivers to convene. They should not, however, attempt to set detailed performance specifications for particular systems.

Presumably, other entities in the DoD (e.g., the service staffs, the operational command staffs, the Joint Staff, and the war colleges) will have gone through similar exercises. The distinguishing feature of any entity bearing the name "Worrier" is the authority to direct that the Conceivers take action, e.g., the CJCS, a Combatant Commander,

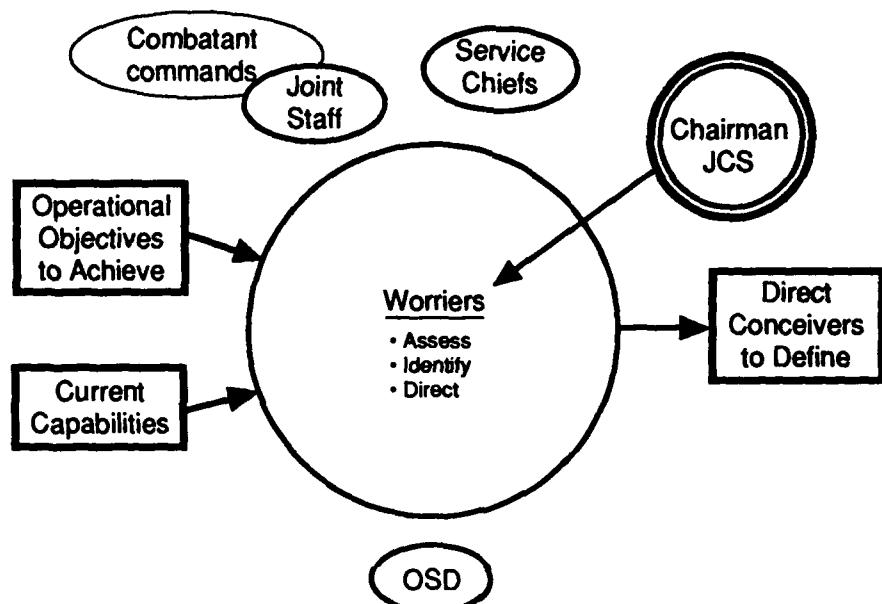


Fig. 3—Pillar I: State objectives, identify deficiencies, and direct action

or the commander of a major service operational command. The Worriers direct some service or agency to formulate, define, and evaluate concepts for achieving stated objectives and accomplishing specified tasks. In doing so, they may designate that appropriate expertise from outside the directed service participate in the effort. Finally, the Worriers may assign tentative fiscal constraints within which solutions would be expected to fit.¹

A directive to convene the Conceivers establishes "Milestone 0."

STRUCTURING PILLAR II: THE CONCEIVERS

Pillar II defines better and alternative concepts to achieve a stated operational objective. The desired outcome of this effort would be a set of carefully formulated proposals (concepts) for enhancing our ca-

¹Though realistic in the sense that they represent a current best estimate of what budgetary limits are likely to be and may even include specified budgetary options, these fiscal constraints would be understood to be subject to change when actual program decisions are made.

pability to achieve the operational objective identified in Pillar I as deserving increased emphasis. Concept definition would normally be accomplished by a Conceiver's Action Group (CAG) formed by a designated service (or services) as part of its assigned responsibility to "organize, equip, and train." Better concepts could involve changes in doctrine, concepts of employment, tactics, training, and/or organization. All of the above are to be considered by the CAG. The convening of a CAG does not mean that the only solution to be considered involves new systems..

Formulating and defining concepts should include the proper blending of operational know-how with inputs from technical experts. This creative process is essential to the proper functioning of the five-pillar framework. The CAG is an interactive partnership between those who know what is technically possible and those who know what is operationally viable and useful. The CAG is the vehicle for making the connection between the desire to achieve operational objectives and accomplish military tasks (sometimes referred to as "requirements push"), and enabling technology (or "opportunity push"). The Conceiver's should be led by operational planners and include operators from the user commands, development planners from acquisition commands, scientists and engineers appropriate for each functional area in the operational concept, and a "Red team" to identify possible countermeasures to the concepts being defined (see Fig. 4).

Much discussion of defense R&D refers to technology as if it were some kind of ripening fruit, maturing by its own devices and begging reluctant military planners to pluck it. Such perceptions sometimes result in pleas for greater attention to speeding up the process of "technology transition" so as to better exploit the fruits of technology in new defense systems. Similar reactions have spawned advocates of the "diffusion of technology" from the laboratory to the field within the DoD.² The image conveyed is one of a technology, having been

²See, in particular, the report of the Carnegie Commission on Science, Technology, and Government, *New Thinking and American Defense Technology*, New York, August 1990, Ch. IV. The extent to which such perceptions can distort perceptive thought is illustrated by the recommendation of the Defense Science Board 1987 Summer Study Group, which advocated the concept of Advanced Technology Transition Demonstrations (ATTDS). They saw such demonstrations as providing "the opportunity for military requirement writers to try new technologies with less risk" according to "a transition plan" that was to be "in place at the outset of the ATTDS." The study group stated several management principles for such demonstration programs, including: (1) stimulate clear definition of the operational military capability to be demonstrated, (2) evoke strong acceptance and sponsorship for the demonstrated capability among operational military commanders, and (3) provide appropriate visibility for such demonstra-

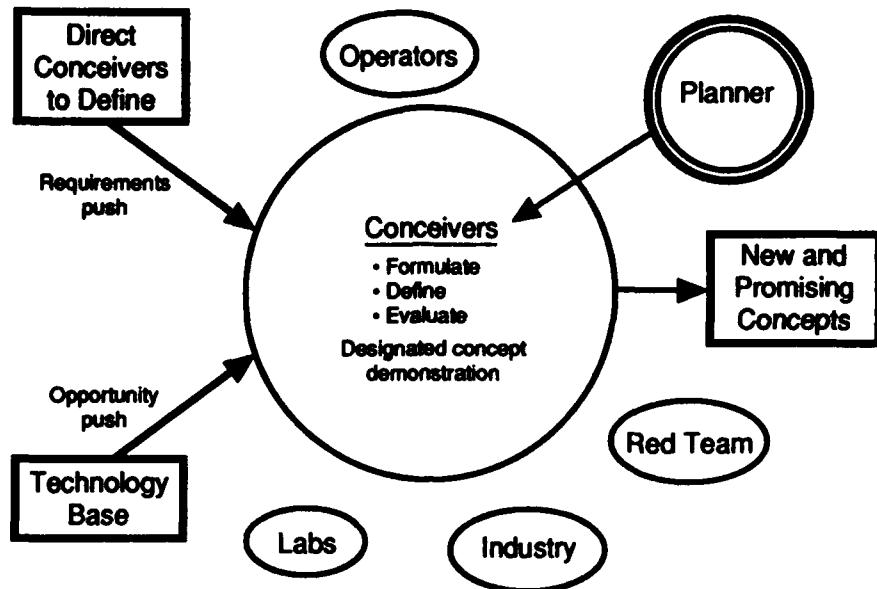


Fig. 4—Pillar II: Formulate, define, and evaluate new concepts

developed and then demonstrated under operational conditions, being brought to the attention of potential users who might be persuaded to show some interest.

This approach puts the cart before the horse. One does not demonstrate a technology in an operational sense. Rather, one demonstrates an operational concept. The operational concept as formulated by Conceivers defines the combination of technologies and human interactions for accomplishing a given military task. The inputs to Pillar II are the "operational requirements push" and enabling technology.³ But the output of the Conceivers is not

tion projects to OSD, to senior military operational commanders, and to Congress. See Office of the Under Secretary of Defense for Acquisition, *Report of the 1987 Summer Study on Technology Base Management*, Washington, D.C., December 1987, pp. 21-25, *passim*.

³The DoD needs to develop new technology aggregates. That is what Basic Research (budget category 6.1) and Exploratory Development (6.2) programs are all about. Moreover, technical efforts themselves can provide the stimulus for new operational concepts. But scientists in laboratories at the 6.1 and 6.2 level should be granted considerable latitude in conceiving and maturing new technologies. They should not be forced into square-filling exercises that attempt to define the audit trail from their ef-

"technology options," it is alternative operational concepts. The critical role of the *Conceivers* is to change the polarity. Once the feasibility of new technologies has been amply established, the development cycle shifts from "technology" to "an operational concept for accomplishing a military task." Any particular technology then becomes one of several that may be needed to implement the concept.

In some cases, it may be necessary to demonstrate that all the elements (technology aggregates) constituting the operational concept under consideration can be harmonized effectively. When necessary, the *Conceivers* should define the "Designated Concept Demonstration" (DCD) that should be conducted to demonstrate "proof-of-principle" of the concept, including a demonstration that functions critical to the concept can indeed be accomplished. The services would conduct these demonstrations using Advanced Development (budget category 6.3A) monies and would provide the results of such efforts in the formal proposal to implement the concept.

For either a proposed new system or an upgrade to existing basic systems, the *Conceivers* (usually the services) should produce a proposal package for initial review by their service chiefs or agency head. Subsequently, the package would be presented in some OSD forum where the service seeks approval to implement the concept and acquire systems. The overall proposal should consist of two packages.

The "Concepts Package" would address the subject of *what* is to be done under the concept and would be produced under the direct leadership of the CAG leader. It should:

- State the operational objectives being addressed.
- Establish the relevance of enhancing the capabilities linked to this objective.
- Describe the end-to-end operational concepts (tactics, systems, and equipment) of different alternatives for enhancing the operational capability.
- Provide an estimate of the respective costs of alternative concepts.

forts to alleviate some validated deficiency. Rather, new and improved technologies enable new operational concepts and, in turn, enable force elements to accomplish existing military tasks more effectively or to accomplish new tasks and objectives. The stimulus for developing and maturing new technologies generally does not stem from directives to redress deficiencies in stated operational objectives.

- Set forth benchmark performance features of any proposed new basic systems or major items of equipment, including assessment of technical risks.
- Provide an evaluation comparing the effectiveness of the different concepts, including analyses of the tradeoff of performance among various components of the overall concept as well as the tradeoff between cost and overall effectiveness.
- Describe the demonstrations that should be conducted to demonstrate "proof-of-principle" DCDs.
- Provide an overall assessment to assist the convening commander (user) in selecting the concepts to implement.

The "Acquisition Package" would address the subject of *how* to go about achieving the enhanced capability. It would:

- Further define the specific systems and equipment chosen to implement the proposed operational concept, along with supporting analyses that demonstrate the appropriate trade-offs in performance within and among the various systems and subsystems.
- Describe the acquisition strategy—how the service intends to conduct the programs to develop and acquire the systems and equipment set forth in the operational concept. This involves a thorough elaboration of the possible approaches and an explanation of why this particular approach to acquisition was selected.
- Delineate how, and on what schedule, the systems and subsystems are to be acquired and the force elements are to be equipped.
- Set forth the criteria for operational testing.
- Explain how these force elements are to be supported to maintain this capability.
- Present a detailed accounting of the cost of accomplishing each and all of these actions according to the stated schedule.
- For new systems, provide evidence of reasonable confidence—in terms of technical feasibility—of attaining the stated performance features.

STRUCTURING PILLAR III: THE DECIDERS

The central functions of Pillar III are to:

- Examine the alternative concepts defined and evaluated by the Conceiver.

- Decide whether to allocate resources to implement the concepts selected.
- Direct that the Acquirers initiate and conduct development programs for acquiring systems to implement the selected concepts.⁴

These functions represent the penultimate step in the planning process by which the defense programs are linked to our national security objectives. As reflected in Secretary Cheney's Defense Management Report, the allocating functions fall logically to the Defense Program and Resources Board. Certainly, this kind of decision requires a forum with the range of expertise and DoD jurisdictional representation to render authoritative judgment on all aspects of the proposals before them (see Fig. 5). By allocating resources to pursue concepts, the Deciders determine, in effect, the most important purposes for which U.S. forces are to be equipped and trained within constrained budgets.

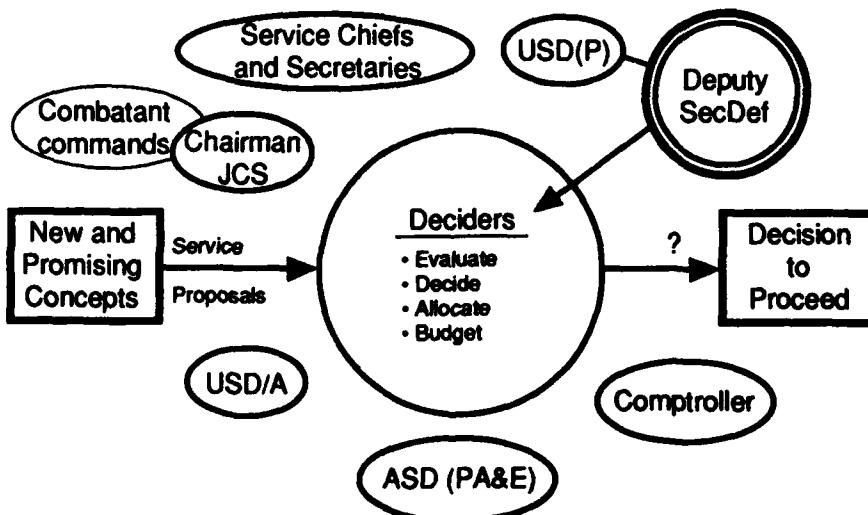


Fig. 5—Pillar III: Decide, allocate, budget

⁴In some instances, in the first phase of a development program (Dem/Val phase) it may be appropriate to conduct a competition among promising concepts that encompass quite different systems. This competition is quite distinct from competition among contractors to develop and produce systems to implement a stated concept. In the former type of competition, contractors with the winning concepts would proceed to implement those concepts without further competition. An increasing focus on concepts to accomplish tasks encourages an acquisition strategy that carries competition among concepts through the first phase of a development program.

In deciding whether to allocate resources, the Deciders would confront several broad issues. One would be to confirm whether the operational objective being addressed and the concept proposed were of sufficient relevance to warrant the allocation of additional resources. Another would be to choose among changing doctrine, tactics, or organization, upgrading force elements according to some agreed-upon operational concept, and implementing a concept involving development of a new basic system.

For new system candidates, the Deciders would be asking the question, "What special capability feature does candidate X bring to the table, and when can it be available?" Concurrently, the Deciders would have to know the risk that the candidate systems can, in fact, perform the functions demanded by the selected concept. This would lead them to either accept or reject the Conceivers' suggested trade-offs among performance, cost, and schedule. Ultimately, they also would have to pass judgment on the Conceivers' projections of the costs and schedules of equipping force elements with defined basic systems, subsystems, and weapons. A decision by the Deciders to implement the proposed concepts would constitute "Milestone I" approval—to implement the programs attendant to the concepts.

The process of deciding whether or not to pursue programs to implement selected concepts takes place in a forum of Proposers, Advisors, and Deciders. The Proposers are usually the services. The Advisors to the Decider (the Deputy SecDef) include:

- The Chairman (or the Vice Chairman) of the Joint Chiefs of Staff would testify as to whether the proposed concept was operationally viable and addressed critical or important problem areas and as to the expected relevance of enhancing our capability to achieve the stated operational objective.
- The Under Secretary for Policy would testify as to the political and strategic implications of attaining (or not attaining) the enhanced capability.
- The Under Secretary of Defense for Acquisition would testify as to whether (a) the proposed strategy to acquire the systems and equipment was, overall, sound; (b) the service estimates for the cost of conducting the programs for acquiring the systems were reasonable; and (c) the proposed concept was technically sound.
- The Assistant Secretary of Defense for Program Analysis and Evaluation would elaborate on whether the proposed concept represents the best way to attain the stated capability and

whether spending resources according to this proposal represents a reasonable allocation of resources.

- The Comptroller would testify as to whether the program could be financed within the current budget.

Allocating constrained resources to best effect depends critically on how the force elements among the available assets are to be used. Sorting out the attendant issues involves models at three levels of analysis:

- Engagement-level models provide insight regarding the preferred operational concepts to accomplish a particular task.
- Operational-level models provide insight on the proper weight of effort among tasks to achieve (within constrained forces) the stated operational objective.
- Theater-level models provide insight as to the proper weight of effort among operational objectives to achieve stated national military objectives for the region.

Each level makes its unique contribution but lacks a resource allocation capability. This must be provided by the next higher level of analysis. Thus, although cost-effectiveness analyses generated by an engagement-level model may help in confirming the selection of a preferred concept for accomplishing a task, they do not tell whether force elements should be equipped for that task in the first place. Determining what tasks should be accomplished by what force elements and at what weight of effort must be addressed at least at the level of operational objectives. But operational-level models cannot provide insight as to the proper weight of effort among different operational objectives. The proper weight of effort among operational objectives must be addressed at the theater level. Finally, the weight of effort among theaters involves a global assessment at the level of national military strategy.

After hearing the testimony and rebuttal respecting these many aspects of the proposal, the Deputy Secretary of Defense would judge whether and when to proceed with attendant development programs (either upgrading existing basic systems or introducing new basic systems). As necessary, the SecDef serves as the court of appeal.

STRUCTURING PILLAR IV: THE ACQUIRERS

With the decision to implement some concept involving the introduction of a new basic system or upgrades to existing systems, the process shifts to the acquisition pillar. The functions embraced by this

pillar are those envisioned by the Packard Commission as being within the purview of the Under Secretary of Defense for Acquisition (USD/A) and his service counterparts.⁵ The work of the Acquirers encompasses a series of periodic management reviews, decisions regarding when and whether to move programs into engineering and manufacturing development (Milestone II) and, later still, decisions on whether the system under development is ready for full-rate production (Milestone III). Acquiring major pieces of equipment is the intended outcome of this pillar (see Fig. 6).

The principal actors among the Acquirers, under current DoD organization, logically are USD/A, members of the Defense Acquisition Board (DAB), and the service acquisition executive teams.⁶ The DAB would be the principal forum for the program management reviews; it would direct its attention to whether individual systems de-

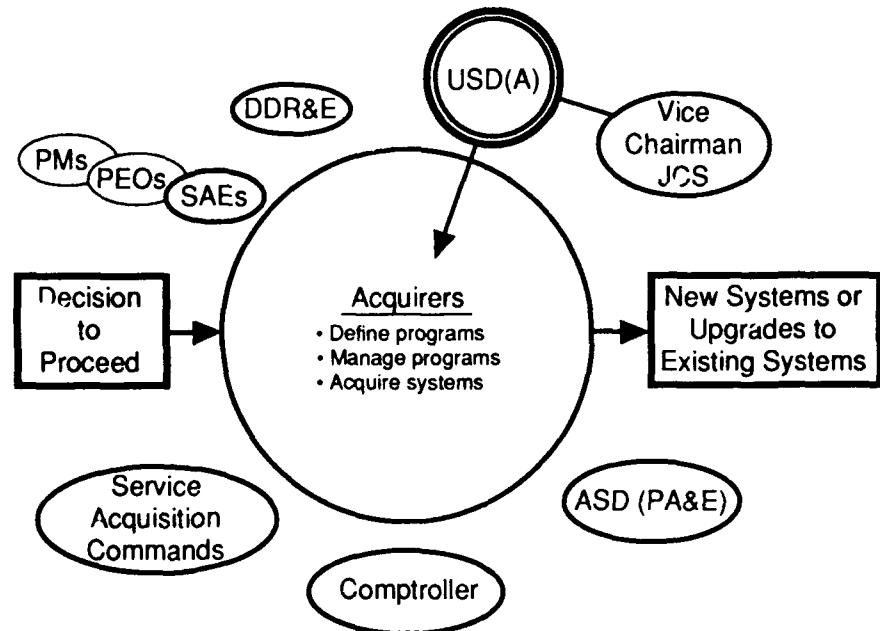


Fig. 6—Pillar IV: Acquire systems

⁵A *Quest for Excellence*, pp. 53–54.

⁶These would include Service Acquisition Executives (SAEs), appropriate Program Executive Officers (PEOs), and appropriate Program Managers (PMs). See Secretary Cheney, *Defense Management Report*, p. 9.

velopment programs were being managed in accordance with DoD acquisition policy.

By the very nature of its focus, the DAB frequently would face the issue of tradeoffs among performance, cost, and schedule. Although these tradeoffs are defined initially by the Conceiver (and Deciders), this matter is bound to crop up again as development programs proceed. Any radical departure from the baseline established earlier would require that the DAB go back to the DPRB, where the intended system operators and policy community are represented,⁷ and to make recommendations for future actions.

The Acquirers' guiding principle should be as set forth for USD/A in Secretary Cheney's DMR:

The paramount objective of the USD/A will be to discipline the acquisition system through review of major programs by the DAB. This review will be calculated to ensure that every program is ready to go into more advanced stages of development or production prior to receiving Milestone approval.⁸

Discipline should be provided by the kind of program management practices the Packard Commission suggested for stabilizing the development of defense systems.⁹ In this respect, the USD/A plays a critical role in deciding whether a particular program is ready to advance beyond each milestone. This input is especially critical for Milestone I, where the DPRB first allocates resources for a program. The USD/A, with the DAB's advice, must determine whether the proposed baseline program is executable. Once approved by USD/A, the baseline would serve as the blueprint by which the service program manager would manage his program.

STRUCTURING PILLAR V: THE ORGANIZERS

Acquiring a basic platform, engagement systems, or weapons does not in itself provide enhanced operational capability. To gain capability, the piece of equipment must be integrated into force elements. Moreover, it must be maintained in fully operative condition for the planned life of the system. Tending to all these matters is the central function of Pillar V.

⁷USD/A is a member of both the DPRB and DAB.

⁸Ibid., p. 7.

⁹A *Quest for Excellence*, pp. 59-60.

The Organizers' functions correspond directly to the principal areas of responsibility assigned to the military departments—to organize, equip, train, and support military forces. Thus, the services occupy the central roles for this pillar. The service Secretary and the Chief, with the advice of the operational commanders, determine the organizational structure for the forces under their stewardship. The Service Acquisition Executive and acquisition commands assist the operational commanders in equipping their assigned force elements. The service logistical commands work closely with the operational commands to assure that proper types and quantities of supplies and support equipment are furnished throughout the service life of the system. It is only when all of these functions are carried out that operational capabilities are truly achieved (see Fig. 7).

The Organizers must ensure that they are ready to integrate the new equipment into their force elements on a timely basis. Therefore, the Organizers' functions begin during the acquisition period. This requires frequent interaction and cooperation among the major program manager, the service acquisition and logistical commands, and the appropriate service operational command. While the original system concept would have acknowledged the need for these supporting func-

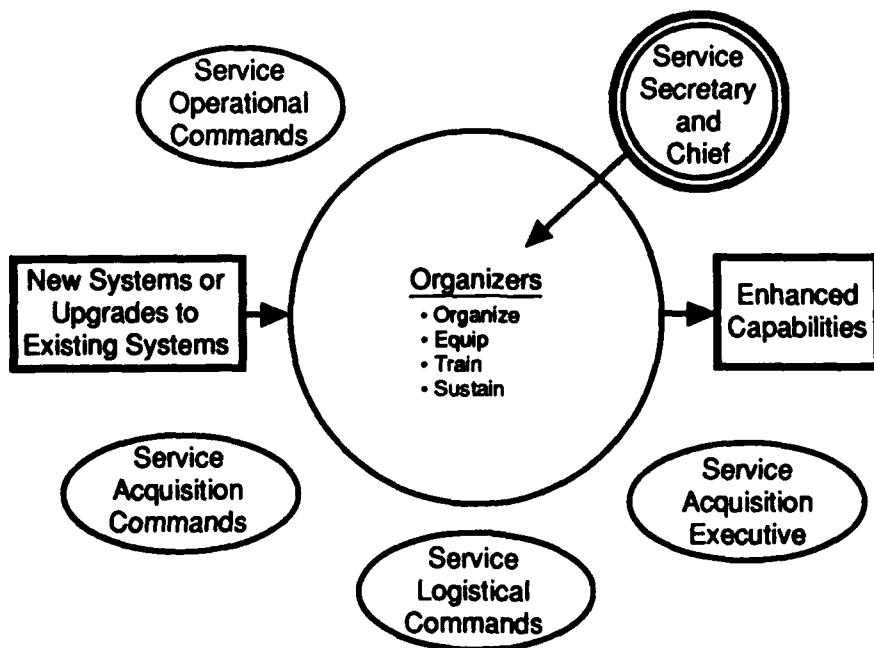


Fig. 7—Pillar V: Organize and equip force elements

tions and the acquisition strategy probably would have included provision for them, separate service management mechanisms will be required to bring each of them into existence according to the agreed schedule.

The output of Pillar V is enhanced capabilities, the reason for engaging in the process in the first place. The enhanced capabilities now become *current* capabilities. We are back to Pillar I and the process starts all over again.

SERVICE ROLES IN ENHANCING MILITARY CAPABILITIES

Since publication of the Packard Commission report and passage of the Goldwater-Nichols Act, DoD efforts to improve military force planning and development have all moved in the direction of greater centralization. However, public law assigns the separate military departments the responsibility for organizing, equipping, training, and sustaining military forces. It follows that force planning is an essential function for the services to manage and that development planning (determining what concepts to underwrite) is a vital aspect of this assigned responsibility. These functions are embraced by Pillars I through III.

Perhaps no activity is more necessary to carrying out these service responsibilities than defining better concepts for accomplishing designated military tasks and achieving stated operational objectives. It is appropriate for a proper DoD official or forum to direct a service to define and evaluate new concepts to achieve some stated operational objective. It is certainly equally appropriate for a service chief, or secretary, or commander of a service major command to direct agencies within that service to conduct such efforts on their own initiative. In each case, the concepts being defined should be responsive to the national security objectives and operational objectives that stem from the hierarchy of security objectives previously defined.

Within the five-pillar structure we described earlier, the service roles in Pillars I through III would be as follows (see Fig. 8):

- Worriers, either at service headquarters or appropriate operational commands,¹⁰ assess the ability to achieve stated opera-

¹⁰The operational command could be either a specified command or a functional component command of a unified command.

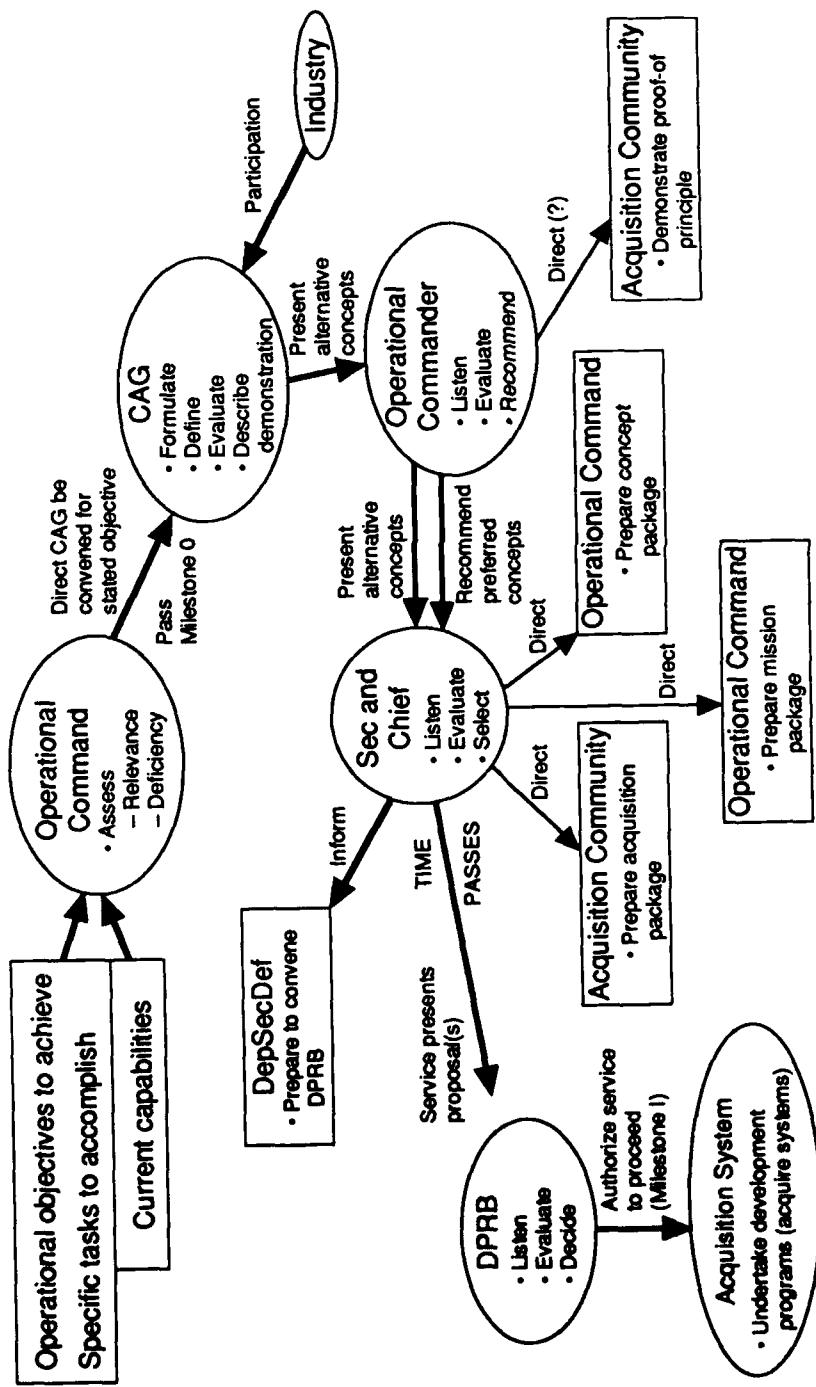


Fig. 8.—The service loop

tional objectives and the relevance of enhancing our ability to do so.

- The operational commander could direct that a Conceivers' Action Group be formed to formulate, define, and evaluate alternative concepts to achieve the stated objectives. Issuing such a directive over the signature of an appropriate commander would constitute Milestone 0.
- The CAG would consist of operational planners, development planners, scientists, analysts, and a Red Team. Interactively, this partnership would formulate alternative approaches, further define the more promising concepts, evaluate the alternatives, and present their findings to the convening operational commander.
- The convening commander would evaluate the concepts as presented and present the viable alternatives to the service chief and secretary along with his personal recommendations.
- The service chief and secretary would evaluate the operational commander's recommendations and select the concept they perceive as best satisfying the designated operational requirement within expected resource constraints. Before making a selection, they might also direct further actions, including additional efforts to demonstrate proof of principle for one or more of the concepts (efforts to be financed with 6.3A monies).¹¹
- The service secretary and chief could inform the Deputy SecDef of their intention to present a formal concept proposal to the DPRB. Meanwhile, the appropriate operational command prepares a formal "Concept Package" for the proposal and the service acquisition command or the SAE prepares the corresponding "Acquisition Package."
- After listening to the service proposal and evaluating it in relation to others, the DPRB would decide whether to allocate resources to implement the proposed concept. A decision to allocate resources (Milestone I) would authorize the service to proceed with Phase I of development programs to develop and acquire the systems to implement the concept.

Formulating, defining, evaluating, and, when necessary, demonstrating new operational concepts for accomplishing military tasks and

¹¹Proof-of-principle demonstrations would normally be directed by the operational commander after his review.

achieving stated operational objectives are vital functions for the services to perform if they are to properly discharge their assigned responsibilities for organizing, equipping, training, and sustaining force elements under their command.

The services currently conduct concept formulation and undertake such efforts on their own initiative. They should be encouraged to continue to do so. The fact that OSD officials may, and should, direct similar efforts should not be construed to mean that the services cannot initiate such efforts on their own.

5. AMBIGUITIES IN CURRENT DoD DIRECTIVES

Many features of DoD's current structure for development planning and acquiring systems are on the mark. However, certain policy documents issued by OSD contain ambiguities that confuse important recommendations of the Packard Commission and features of the Goldwater-Nichols Act. These two documents, the stimuli for recent DoD reorganization in the first place, make a clear distinction between the process for determining what capabilities are needed to support national policy objectives (development planning) and the process of acquiring defense systems (acquisition).¹ However, most of the policy documents issued by OSD unduly insert officials that are responsible for managing acquisition functions into the process for determining what capabilities are needed and intended. This issue is discussed below.

SECDEF'S DEFENSE MANAGEMENT REPORT

The Defense Management Report contains major ambiguities concerning which senior managers are responsible for two elements of the development planning process (Pillars I through III). Specifically:

- Who is responsible for directing services or other agencies to initiate concept formulation (Milestone 0)?
- What is the forum for deciding whether to allocate resources to implement new concepts (Milestone I)?

In fact, the reader can obtain different answers to these questions depending on which section of the DMR he consults. Section II, *Management Framework*, provides one set of answers. Section III, *Defense Acquisition*, provides another.

¹The Packard Commission does not confuse development planning with acquisition. These two subjects were addressed in two well-separated chapters—Chapter I, "National Security Planning and Budgeting," and Chapter III, "Acquisition Organization and Procedures." Moreover, its language makes it quite clear that the Under Secretary of Defense for Acquisition, a position the report recommended be established, was intended to concentrate on management of the DoD's acquisition of hardware and equipment: "This Under Secretary, who should have a solid industrial background, would . . . set the overall policy for procurement and research and development (R&D), supervise the performance of the entire acquisition system, and establish policy for administrative oversight and auditing of defense contractors." See *A Quest for Excellence*, Summary, p. xxiv.

According to Section II of the DMR

Section II of the DMR sets forth the framework for decisionmaking within DoD. The subsections within Section II define the responsibilities of officials and forums that have roles in the development planning and acquiring defense systems.

If one reads only from Section II of the DMR, one can make the case that the current DoD management of development planning follows the logic of the five-pillar approach. Moreover, it adheres to the following of the DMR's own stated principles: (1) "The individual responsibilities of senior managers must be well understood," and (2) "Managers must be given a range of authority commensurate with their responsibility."² One can easily infer the following:

Pillar I. The functions of this pillar are in good hands. The CJCS is the senior manager and the Joint Requirements Oversight Council (JROC) is the forum.

- The CJCS, through the Vice Chairman JCS and the JROC, is discharging his responsibilities according to the Goldwater-Nichols Act; he serves as spokesman for the combatant commanders, confers with the commanders with respect to their requirements, evaluates these requirements, and communicates, as appropriate, the requirements of the combatant commands to other elements of the Department of Defense. Also, in the language of the DMR, "as spokesman for the Joint Chiefs of Staff (JCS) and the Commanders-in-Chief of the Unified and Specified Commands (CINCs), the CJCS will advise the Secretary and Deputy Secretary on the full range of issues and participate in senior councils within DoD."
- The JROC was chartered by the CJCS and the Secretary of Defense to assist the Chairman in carrying out the responsibilities assigned him by Goldwater-Nichols. In the language of Section II of the DMR, "the Joint Requirements Oversight Council, chaired by the VCJCS, will assume a broader role in the threshold articulation of military needs."³

Pillar II. Although Section II of the DMR makes no explicit reference to the work of the Conceivers (Pillar II), this omission is not a fa-

²DMR (1989), pp. 2-3.

³The full text of this statement in the DMR prefaces it with the phrase, "To assist the USD/A and the DAB...." As we will argue later, linking this JROC function to the USD/A and the DAB diffuses responsibility for the function and is inconsistent with provisions of Sec. 163 of Public Law 99-433.

tal flaw. The services do, on a continuing basis, define and evaluate alternative concepts to alleviate deficiencies. According to our proposed framework, the purposeful action caused by the deliberations of the JROC would be to direct, or recommend that the Deputy Secretary of Defense direct, that services or other designated agencies "convene Conceivers" to define and evaluate alternative concepts.

Pillar III. The responsibilities for Pillar III are clear and commensurate with the five-pillar logic: The Deputy Secretary of Defense, through the DPRB with the USD/P acting as the primary advisor, will be in charge of deciding what directions we are to take—i.e., to which operational objectives we allocate resources, and which operational concepts we implement.

- The Deputy Secretary of Defense is charged with responsibility for "operation of a more rigorous Planning, Programming, and Budgeting System (PPBS) designed to produce a coherent, integrated, and efficient defense program."⁴ Moreover, he is to perform this function "as chairman of a Defense Planning and Resources Board (DPRB). . . . Through the DPRB, the Deputy Secretary will help to develop stronger links between our national policies and the resources allocated to specific programs and forces."⁵
- According to the subsection labeled "The Under Secretary of Defense for Policy," the USD/P will serve as the primary adviser to the Deputy Secretary of Defense for the planning phase of the PPBS and will be an important participant in programming and budget decisions as well.

According to Section III—What Is the Proper Forum for Initiating Concept Formulation?

We now address the issue of management responsibility for elements of development planning from the vantage point of Section III. First, which senior manager (and forum) is responsible for Pillar I—directing (or authorizing) the services or other designated agencies to conduct efforts to formulate, define, and evaluate alternative concepts to alleviate critical deficiencies? On p. 18 of the DMR, we find the following:

Annually, the DAB will review mission needs identified by the JROC for possible Milestone 0 approval. Those candidates passing through

⁴DMR, p. 3.

⁵DMR, p. 5.

this restructured Milestone 0 would not be considered programs in the traditional sense; instead, at this threshold the USD/A will authorize Concept Direction studies to evaluate potential alternative approaches to meeting validated, priority needs.

What is being said here is that the DAB reviews the pronouncements of the JROC and that the USD/A (DAB) decides whether to initiate efforts to formulate, define, and evaluate alternative operational concepts to meet validated mission needs. Moreover, the USD/A is the official who directs or authorizes such efforts. The JROC is cast as an advisor to the DAB regarding Milestone 0.

This seems inappropriate. The composition of the forum called the DAB is geared to manage development and acquisition programs, not for deciding which operational deficiencies are most critical and deserve remedial action. However, the composition and charter of the JROC are geared for making decisions about which deficiencies deserve remedial action. Thus, the JROC should be the forum for managing Milestone 0 decisions and the DAB (as a forum) should not be inserted into the process for making this decision.

Assigning Pillar I functions to the DAB and USD/A is not consistent with Sec. 163 of the Defense Reorganization Act of 1986, wherein the Chairman, JCS, is assigned specific and relevant responsibilities:

(A) confer with and obtain information from the commanders of the combatant commands with respect to the requirements of their commands; (B) evaluate and integrate such information; (C) advise and make recommendations to the Secretary of Defense with respect to the requirements of the combatant commands. . .; and (D) communicate, as appropriate, the requirements of the combatant commands to other elements of the Department of Defense.

We read "communicate . . . to other elements of the Department of Defense" as including communicating with the services to initiate efforts to alleviate deficiencies identified by the combatant commands and validated by an appropriate forum of experts commissioned by the Secretary of Defense and the Chairman, JCS—namely the JROC.

The argument is not whether the USD/A should have a role in deciding when and for what purpose services should be directed (Milestone 0) to engage in concept formulation (our words). The role of the USD/A in this regard could be assured by having the USD/A as a regular member of the JROC. Rather, the question is why the responsibility for deciding which "mission needs" should be addressed through concept formulation and for directing such action is assigned to another forum (the DAB) when the appropriate forum (the JROC) has already focused on this issue.

There is a serious inconsistency in suggesting, as the DMR does on p. 17, that the CJCS is to assume an important role with respect to operational requirements and then relegating the DoD forum chartered for this purpose (JROC) to assisting the USD/A in making decisions that are logically, and by law, the responsibility of the Chairman in the first place. In our view, the SecDef should delegate the CJCS, assisted by the JROC, as the senior manager responsible for projecting mission needs and for directing a service or appropriate agency to initiate concept formulation to alleviate critical deficiencies.

According to Section III: What Is the Proper Forum for Deciding to Pursue New Programs?

The DMR is inconsistent within itself also with regard to which senior manager and forum are responsible for deciding whether to implement particular concepts (Pillar III). According to pp. 4 and 5 of Section II, this responsibility is assigned to the Deputy Secretary, and the supporting forum is the DPRB. However, on p. 19, we find the following statement:

As prospective programs pass out of the Concept Direction (post-Milestone 0) phase, the USD/A will convene a DAB Milestone I (Concept Approval) review.

This statement can be interpreted as stating that the DAB—and not the DPRB—becomes the forum for deciding whether to implement some operational concept and thus, in effect, for allocating resources to such efforts. Such an interpretation is reinforced on p. 2-2 of DODI 5000.2.

As stated earlier, the very essence of planning (and programming) is to decide for what purpose scarce resources are to be allocated. If the decisions about allocating resources are to be made in the DAB—and not the DPRB—then we are only giving lip service to the idea that “the Deputy Secretary [who chairs the DPRB] will oversee the system for planning, programming, and budgeting and will revitalize the planning process to integrate more effectively defense resource decisions with national security policy.”⁶ Clearly, the DPRB is composed of the right balance of staff representation to make resource allocation decisions that reflect the proper emphasis among national security objectives and operational objectives. Accordingly, it is the proper forum also for deciding which programs should be pursued.

⁶DMR, Executive Summary, p. i.

These two decisions cannot logically be separate decisions; they are one and the same.

The ambiguities resulting from statements in Section III and p. 2-2 of DODI 5000.2 have, in effect, encouraged perceptions of a management framework that operates according to Fig. 9.

DoD DIRECTIVE 5000.1

Department of Defense Directive (DD) 5000.1, "Defense Acquisition," goes even farther than the DMR in *inserting the Acquirers into the process of development planning*. This directive, revised effective February 23, 1991, sets forth policies on managing acquisition programs (see Section B, paragraph 2 of the covering letter signed by Deputy Secretary Atwood). In doing so, DD 5000.1 institutionalizes several of the unfortunate provisions in the DMR that have been questioned above.

In Section C, "Definitions," of the same covering letter, the term "acquisition program" is defined as "*a directed, funded effort* that is designed to provide a new or improved materiel capability in response to a validated need." (Emphasis added.)

If DD 5000.1 were indeed about how to manage funded programs to acquire materiel systems, as the covering letter states, there would be no problem, at least as regards development planning, because the development planning process is separable from a process or "system" for managing programs. Development planning is the process that occurs up to and including Milestone I. Selected operators and other Conceivers define and evaluate alternative concepts to provide the enhanced capabilities deemed relevant by national leaders and appropriate commanders. Operators and Conceivers then make recommendations, as appropriate, to implement the concepts that the national leaders and commanders select.

However, this DoD Directive goes beyond the bounds of stating policies for a system to manage funded acquisition programs. It outlines an intended relationship among portions of the development planning process (its name, the Requirements Generation System), the Acquisition Management System, and the PPBS. In describing the relationship between development planning and acquisition management, DD 5000.1 seems to subsume elements of the former within the latter; specifically, according to the directive:

- USD/A (and the DAB) approves concept studies—Milestone 0.
(Part 2, section B, para. 5.)

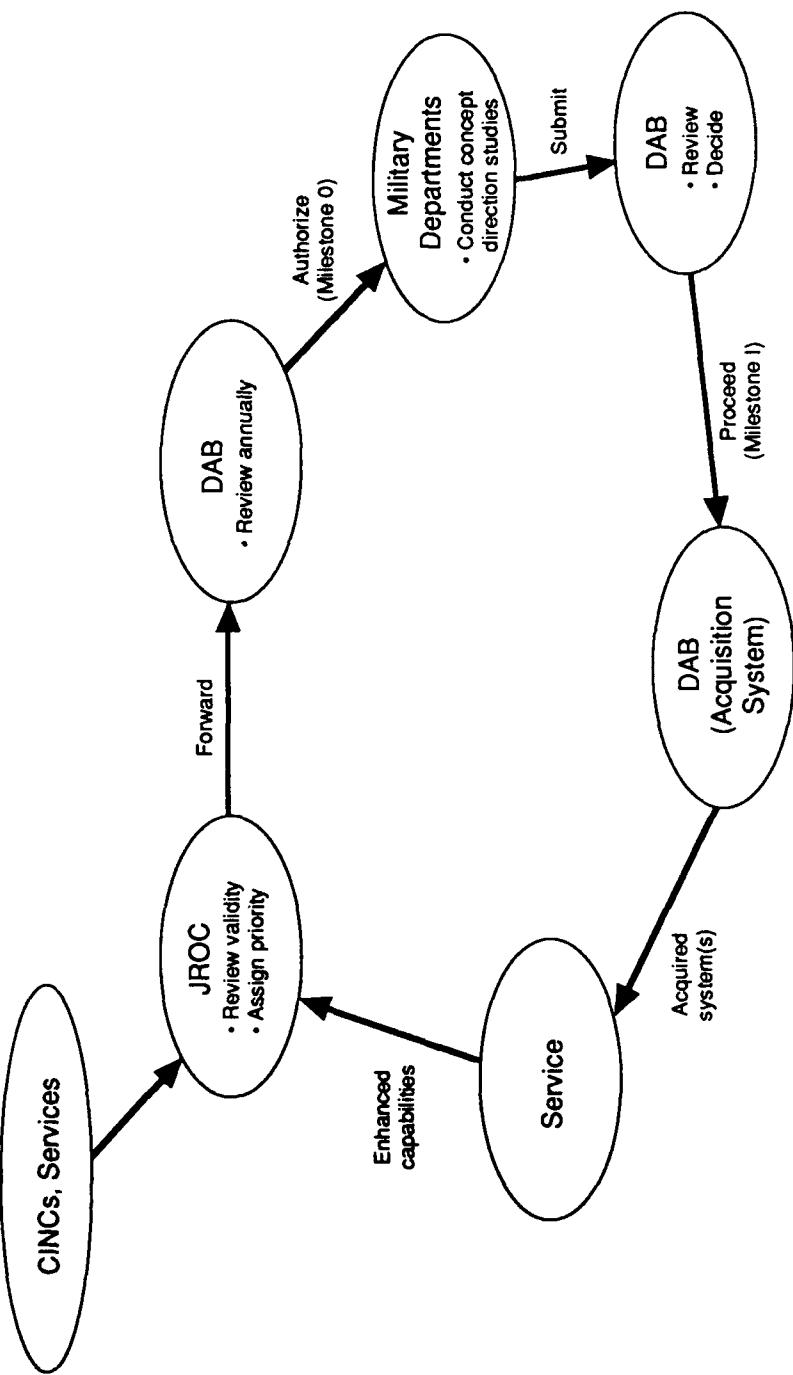


Fig. 9—Possible perception of the management framework

- The Acquisition Management System "is the means for translating the user's needs into alternative concepts. . ." (Part 2, section C, para. 1.)
- The Acquisition Management System includes "concept selection." (Part 2, section C, para. 1 schematic.)
- "Acquisition phases" within the Acquisition Management System provide the means for "translating broadly stated mission needs into well-defined system-specific requirements." (Part 2, section C, para. 3.)

In terms of our proposed framework, the DoD Directive's acquisition management structure, which is quite appropriate for Pillar IV, in effect subsumes some of the unique functions of Pillars I, II, and III. The difference is clear. Our suggested approach accords the users/operators the leading role in several essential development planning functions. These include directing that concept studies commence; defining and evaluating alternative concepts; selecting preferred concepts to enhance needed capabilities; and making recommendations to the proper forum, as appropriate, to initiate and fund the programs to implement the selected concepts. In contrast, DD 5000.1 seems to place all these functions under the Acquisition Management System, although, the purpose of the system is described more narrowly, i.e., as a system designed to manage programs already approved.

6. CONCLUDING COMMENTS

Assuring firm conceptual links between programs to enhance military capabilities and our national security objectives can be a straightforward process. The national security community need only apply a disciplined way of thinking about the interrelationships among different stages of the process. We have suggested a simple, coherent conceptual framework to facilitate this.

By applying the concept of subordinate objectives, one can articulate a clear audit trail from national security objectives to the specific functions needed to accomplish basic military tasks. A plan of action at each level of organization defines objectives for the next subordinate operational level, thereby creating a hierarchy of related objectives that culminates in the fundamental building blocks of military capability (see Fig. 1).

The remaining portion of the framework moves the process from the identification of needed tasks and functions through a cycle of essential management actions for enhancing actual operational capabilities. The five functional pillars in this cycle (see Fig. 2) and our proposal for their application by the DoD complete the linkage of objectives with concrete programs for acquiring systems and organizing, equipping, and training specific force elements.

Of course, one must acknowledge the reality that the DoD alone cannot control all of the policy and program decisions that affect such a process. Both Congress and the Bureau of the Budget have carved out vital roles in the organization and procurement of military capabilities. However, an audit trail that ensures coherent links between national security objectives and the allocation of resources for specific equipment and forces within the DoD should be equally useful for convincing these reviewing authorities of the wisdom of proposed DoD programs.